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An Inaugural dissertation on Intermittent Fever

By

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of

Georgia

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Passed March 1825

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A Dissertation on Intermittent Fever.

This is a disease of periodical recurrence, having between the paroxysms a complete intermission of all the febrile symptoms. Cullen places it in his class Pyrexiæ and order Febres, defining it a fever arising from marsh miasma consisting of many paroxysms. It has received different names according to the length of time which intervenes between the beginning of one paroxysm and that of the next.

If they recur every twentyfour hours it is called a quotidian, if they recur every fortyeight hours it is called a tertian, if they recur every seventytwo hours it is called a quartan. Authors mention fevers recurring at intervals of five, seven and nine days, of months and even annually; but these are either anomalies or of such rare occurrence as not to merit further notice.

Besides the primary forms above mentioned, there is the

double tertian, having a paroxysm every day, with alternate paroxysms alike. The double tertian, having two paroxysms every other day. The triple tertian, having two paroxysms on one day, and one on the next. The double quartan, having two paroxysms on the first day, none on the second and third, but two again on the fourth. The double quartan, having a paroxysm on the first, another on the second, but none on the third. The triple quartan, having three paroxysms every fourth day. The triple quartan, having a paroxysm every day, every fourth paroxysm being alike. +
The tertian is the most common form of the disease.
The disease frequently appears, first in the quotidian type, but soon degenerates into the tertian, and thence into the quartan, in which last form, it often remains for one or two years. Dr Wilson says the quotidian is a rare form of the disease — that most cases, having a paroxysm every day, are double tertians. To this I cannot subscribe. From the paroxysms returning at the same hour every day, their force and duration the same, and from their similarly in every respect, I am constrained

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to consider them quotidians, and the double tertian comparitively a rare type of the disease. I have often observed that intermittent fever seldom remains long in the quotidian type, it either becomes remittent or continued, or degenerates into the tertian or quartan.
The paroxysm sometimes comes on an hour sooner at every attack than the preceding, forming what is called an anticipating ague; sometimes an hour later, forming a postponing ague. I should not omit to remark, that in anticipating agues, when the paroxysm comes on at eight oclock in the forenoon, the next will usually come on at eight oclock in the afternoon of the succeeding day, if it be a tertian. The same remark holds good of the other forms of the disease. The converse is true of postponing agues. A large majority of attacks happen in the daytime, and according to most authors, the quotidian in the morning, the tertian at noon, and the quartan in the afternoon. Those attacks which happen in august are called autumnal, those which happen in february are called ver-

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nal. Vernal intermittents generally disappear on the approach of summer. When the disease is interrupted in its course, by medicine or other causes, it is disposed to return on the seventh, fourteenth and twenty ~~first~~ days. Therefore it is important, in a practical point of view, to attend particularly to these days. Miasma will usually produce fever in five or ten days after its reception into the system. It will sometimes produce it sooner, often after a much longer period – even of months. The interval between the paroxysms is called apyrexia. The paroxysm is naturally divided into the cold, hot and sweating stages.

The cold stage.

The patient first feels languid, uneasy and restless; he says he is ill, yet cannot fix upon any particular part, as the seat of his disease; he has an unceasing desire to change his place or posture, yet there is a feel of wearing which resists that disposition; he soon feels a sense of external cold and desires to

sal nerves begin to be affected, he sees; in mean and distorted; his nose is swollen and rather sharper than natural; his veins are a dark bluish appearance, owing to the slow movement of the blood in the capillaries; his skin is constricted, giving it that appearance called cutis anserina, and a chilly sensation commences in the sacrum, just of the back and runs towards, following the course of the spine, which soon becomes general; his teeth begin to chatter; rigors come on, together with a tremour of the whole body, so violent, as to shake the bed; he complains of extreme cold, yet his skin is warm to the feel of another, his respiration is quick, hurried and anxious; has a sense of weight about the breast, and a dry convulsive cough; his bowels are obstinately constipated, his pulse is small, frequent and often irregular; his features are shrunk, and his thirst considerable, his urine colourless, and with these, there is a total loss of appetite. During the cold stage, ulcers and

remains dry and hot, but these subside in two or three hours, upon the accession of the hot stage.

The cold stage usually lasts from one to two hours.

The hot stage.

The hot stage comes on with intense pains and chills, and consequently nausea and vomiting. The features become full and round, the skin dry and hot, the pulse full, strong and rapid; the urine is colored, and the thirst almost insupportable. Not unfrequently there is a preternatural determination of blood to the head, indicated by the injected eye, the flushed countenance and the throbbing of the temporal arteries; producing coma or delirium.

The sweating stage.

The first appearance of the sweating stage is a moisture on the forehead, next on the breast and neck, and thence over the body and extremities. The urine is still high colored and when exposed to the atmosphere soon becomes turbid; the thirst abates; the pulse becomes soft and full, and the functions return to their

[illegible] [illegible]. Cases are on record, where the cold, hot and sweating stages have [illegible] in complete intermittent rhythm, without [illegible] sweat or [illegible] of the [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] that [illegible], [illegible] [illegible] met in this disease. The continuous, [illegible] & intermittent fever in one [illegible], are [illegible] [illegible] in these cases.

Predisposing cause.

Marsh miasma is indisputably the most common cause of intermittent fever. This discovery was made by Lancisi about the middle of the seventeenth century. It is caused by the decomposition and putrefaction of vegetable substance. It cannot be detected by the taste, smell, or by the most delicate chemical tests. Every attempt, [illegible] made, to ascertain the precise nature of this poisonous [illegible] [illegible] [illegible]. A heat, not [illegible] [illegible] [illegible] degrees, [illegible] [illegible] [illegible] of moisture, are necessary to its formation. [illegible] [illegible] marshes are the most fruitful sources of the malarious [illegible], but it is generated in some countries, by [illegible] [illegible], or by long continued rains, succeeded by excessive heat.

[illegible]

[illegible]

[illegible]

[illegible] growth of [illegible]: But its incumbent [illegible] of the [illegible] result in [illegible] miasma. A graver [illegible] of this institution the [illegible] of [illegible] [illegible] [illegible]. [illegible] situations [illegible] in [illegible], [illegible] by cutting [illegible] the [illegible] [illegible] of [illegible]sms. Besides miasma, extremes of heat and cold, sudden [illegible] &c. are said [illegible] to act as the causes of [illegible].

Exciting cause.

Many things may act as the exciting causes of this disease, but nothing [illegible] of [illegible] [illegible] right [illegible]. Of the [illegible] of [illegible] or [illegible], [illegible] us in a voice which the most deaf must hear. Damp rooms, clothes or beds, [illegible], [illegible] exercise, checked perspiration and the [illegible], may all act as exciting causes of the disease. [illegible] the system, may act as an exciting cause.

Pregnancy

[illegible]

[illegible]

Tonsilitis.

Inflammation, [illegible] in the throat, [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [

accounts of Venus, water. When the moment
arrives for the examination of a case in the
[illegible] the Venus [illegible] becomes their [illegible]
[illegible] at the time, not quite so. I think the rem
[illegible], in most cases, [illegible]. At the time,
there is not an [illegible] [illegible] will be [illegible]
[illegible] the [illegible], [illegible] [illegible]
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When no such determination exists, it may be left as
an [illegible]. [illegible] [illegible] [illegible] [illegible]
[illegible] determination to the mind, [illegible] [illegible]
[illegible], and [illegible] [illegible] [illegible] [illegible], it then
becomes [illegible]. [illegible] [illegible], [illegible] [illegible]
[illegible]. If [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible], however [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

ominous [illegible] under such circumstances, we may look for the most alarming symptoms at the next cold fit. In such cases, the abstraction of a few ounces of blood from the [illegible], by means of cups or leeches, which can but little affect the general circulation, [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] wait ed. We may [illegible] [illegible] [illegible] [illegible], when the [illegible] [illegible] [illegible] [illegible], [illegible] in autumn, when most diseases [illegible] [illegible] tendency.

Treatment of the sweating stage.

All we have to do in the sweating stage, is to avoid whatever might have a tendency to check the perspiration, and support the strength, if necessary, by gentle cordials.

2ndly To prevent a return of the paroxysms.

This comprises the treatment in the apyrexia.

An opiate, given in a full dose, so that we may have its full effect about the time of the anticipated at-

lack, will so intensify the constitutional irritation of morbid specialities, as to induce its recurrence at that time. This there are many remedies, and never without success. An emetic given at the same time, will assume the function of the same result. Either of these will cure the disease, though it may take a time for the exhibition of more important remedies.

The Peruvian bark has long and deservedly held a distinguished place in the cure of this disease. It has been met with more recent opposition, as there is an introduction into the materia medica. The ancients extolled the various vegetable and mineral kingdoms; they bring every article, either animal and basic, and in every species combination which human ingenuity, or superstition could devise, to find a substitute. It is worthy of note, their labours were unpaid. Two hundred years have elapsed, since its first introduction to the cure of this disease, and all subsequent experience confirms its power.

There are three officinal species in common use, viz:

the concentrated solution or syrup; the extractive
resinous or colouring matter, and the cinchonic obtained
yellow or red bark. The barks of several other species
of cinchona discovered, are used. The discovery
and separation of the sulphates of quinine and
cinchonine, is certainly one of the greatest benefits
of modern pharmacy. The bark has been discovered to possess an alkaline or salifiable base, in
which its virtues principally reside, and which,
by the addition of sulphuric acid, forms the
above mentioned salts. This alkali is different
in the different species; that which is obtained
from the yellow, is called quinine; that which
is obtained from the pale, is called cinchonine;
both of which are obtained from the red.
A grain of either of these salts, is the ordinary
dose, and is equivalent to a drachm of the
crude bark. Though this be the ordinary dose;
more may be often given with advantage.
Ten grains have been taken through mistake,

without producing any untoward symptoms, and on the contrary, arrested an obstinate intermittent. This preparation possesses decided advantages over bark in substance. Minute in its dose, the most irritable stomachs will be able to retain it. It is also peculiarly adapted to children, and those persons, who from idiosyncrasy or other causes, have an antipathy to the bark in substance.

The common dose of the bark, is a drachm, but larger doses are often given. The bark is also used, in infusion, decoction, tincture, extract, clysters, and applied to the surface. All these modes are inferior to the bark in substance, and are only resorted to, when from irritability of the stomach or other causes, the latter cannot be retained. They will therefore be, in a great measure, superseded, by the sulphate of quinine. There has been much altercation about the most proper time to administer this article, and also about the preparatory measures, necessary to

be taken, previous to its exhibition. Dr Cheyne waited until the fifth day, in Italians, to see whether or not, the bark would be necessary, and Dr Brocklesby "let the fever run on a little, because, says he, "giving the bark too soon, produced much pain in the head, yellowness of the eyes and sometimes continued fever." I am persuaded that in these cases, the bark was given without regard to the state of the primae viae. To say the least, I have never seen a case, in which it was not advisable, to give the bark as soon as the necessary preparatory measures shall have been taken. By procrastination, we have the combined powers of disease and habit to combat with. Where there is much pain in the head, throbbing of the temporal arteries, a full, strong and active pulse; and other marks of the phlogistic diathesis, we must resort to venesection. The rules regulating this evacuation, were delivered when treating of the hot stage. To them, I have only to add, that

blood should be drawn as early in the disease, as circumstances will admit of. The next thing demanding our attention, is the state of the bowels. Here emetics have been almost superseded by purgatives, the most fashionable, but not more usefull class of evacuants. I would not wish to be understood as derogating them, but to say less would be extenuation. In recent attacks, where there is much gastric distress, furred tongue, &c. I am firmly persuaded, emetics should have the preference. They make a powerful impression on the primary seat of the disease, and if judiciously prescribed, break the first link in the chain of morbid derangement, and the rest falls as a consequence. They may be administered in the cataxia, and occasionally in every stage of the paroxysm. I think their application to the hot stage, mostly exceptionable. At this time we frequently find a preternatural afflux of blood to the brain, which the effort of

vomiting will always ensue. If an emetic were administered under such circumstances, the consequences might be fatal. Moreover, there is nothing to be gained by them at this time, more than at another, which may not, in a great measure, be obtained by nauseating doses. How often emetics should be repeated, cannot come under the cognizance of a general rule. One will often be sufficient. Suffice it to say, they should not be discontinued until every symptom, indicating a foul state of the stomach, shall have disappeared. I will take this opportunity of remarking, that in obstinate cases, kept up by visceral obstructions, independent of inflammation, emetics are most decidedly useful. They should be given every morning, for five or six days successively, the patient kept in bed, and opiates in small doses administered, every five or six hours during the day. Purgatives next demand our attention. Here calomel stands pre-eminent. We frequently

fond intermittent fever, and a tendency of bile, or some hepatic derangement, consistent. In such cases, calomel is peculiarly valuable. Besides the dominion which it exercises over the system generally, it appears to exert a kind of specific influence over the hepatic system. It is customary to combine it with some other regulator, as aloes, rhubarb or gamboge. The same reason which I made when speaking of emetics, is equally conclusive against regulators, that either should be avoided unless the disease can well be considerably changed. Either then premises, we should resort to the exhibition of the bark. It should be given only during the apyrexia, and so administered, that we may have its full effect about the time of the expected paroxysm. In some, give in an drachm dose, among the last eight hours immediately preceding the general attack, or till in a month of cases, vomit is necessary. The best general rule is, to give as much as the stomach will bear. We may frequently combined its nauseating effect —

fects, by the addition of an aromatic. If it purge, we must add some anodyne; if on the contrary it occasion costiveness, some gentle aperient will be necessary. Many menstrua have been employed to disguise its taste. Dr Pine says "a drachm of the bark, in two ounces of milk, drank quickly after it is mixed, may be taken by a person of the most delicate taste, and by washing the mouth afterwards not the least flavour of the bark will remain."
I am persuaded that liquorice will accomplish this end as effectually as any other article. The bark should be continued, until the general health and strength of the patient shall be restored, or alternated with some other tonic. If the attack shall have been severe, or protracted, a relapse is to be feared; to prevent which, the bark should be given in damp chilly weather, for weeks or even months.
We have several indigenous articles which have been found useful in this disease – the prunus virginiana, cornus florida, eupatorium perfoliatum &c.

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The latter has been highly reccommended of late. That they all posses tonic powers, and will occasionally arrest the disease, does not admit of a doubt; but they are inferior to the cinchona, and except in mild cases, should never be employed to its exclusion. All the vegetable and mineral tonics have been employed. The black oxyde of iron, I have seen, beneficially used, in alternation with the bark. An enlargement of the liver, spleen, or pancreas, is frequently the effect of protracted intermittents. Such cases are generally more difficult of cure. Their removal is generally effected, by an alterative course of mercury, or a gentle ptyalism. If these fail, a tour of pleasure, through some healthy and mountainous section of the country, will be beneficial. Besides the profit acquiring from exercise and an invigorating atmosphere, there is a change of scenery and those every day ocurrences, which, by virtue of association, contribute, not a little, to its obstinacy.